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CLAIMS:

What is claimed is:

- 1 1. A method for increasing the capacity of a magnetic
2 tape, comprising the steps of:
3 selecting a first head-to-media spacing for a first
4 side of a magnetic tape;
5 forming a first magnetic coating on said first side
6 of said magnetic tape, wherein a distance between a first
7 surface of said first magnetic coating and a first
8 recording head arranged adjacent to said first surface is
9 substantially equal to said first head-to-media spacing;
10 selecting a performance value for a second side of
11 said magnetic tape;
12 determining a second head-to-media spacing for said
13 second side of said magnetic tape, said second head-to-
14 media spacing associated with said performance value; and
15 forming a second magnetic coating on said second
16 side of said magnetic tape, wherein a distance between a
17 second surface of said second magnetic coating and a
18 second recording head arranged adjacent to said second
19 surface is substantially equal to said second head-to-
20 media spacing.
- 1 2. The method of Claim 1, further comprising the steps
2 of:
3 selecting a Signal-to-Noise Ratio (SNR) value for
4 said second side of said magnetic tape; and

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5 determining a recording density value for said
6 second side of said magnetic tape, said recording density
7 value for said second side of said magnetic tape
8 associated with said SNR value selected for said second
9 side of said magnetic tape and said second head-to-media
10 spacing.

1 3. The method of Claim 1, wherein the magnetic tape
2 comprises a two-sided magnetic tape.

1 4. The method of Claim 1, wherein said first head-to-
2 media spacing is associated with a roughness of said
3 first surface, said second head-to-media spacing is
4 associated with a roughness of said second surface, said
5 roughness of said second surface is greater than said
6 roughness of said first surface, and a recording density
7 value associated with said first surface is larger than a
8 recording density value associated with said second
9 surface.

1 5. The method of Claim 4, wherein said recording
2 density value associated with said first surface
3 comprises a high recording density value, and said
4 recording density value associated with said second
5 surface comprises a medium recording density value.

1 6. The method of Claim 1, further comprising the steps
2 of:
3 selecting an SNR value for said second side of said
4 magnetic tape; and

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5 determining a recording density value for said
6 second side of said magnetic tape, said recording density
7 value for said second side of said magnetic tape
8 associated with said SNR value selected for said second
9 side of said magnetic tape and said second head-to-media
10 spacing, and wherein said SNR value is derived from an
11 equation: $SNR(dB) = n W \lambda^2 e^{-kd}/6$.

1 7. The method of Claim 1, wherein said performance
2 value comprises a spooling performance value.

1 8. A two-sided magnetic tape, comprising:
2 means for selecting a first head-to-media spacing
3 for a first side of a magnetic tape;
4 means for forming a first magnetic coating on said
5 first side of said magnetic tape, wherein a distance
6 between a first surface of said first magnetic coating
7 and a first recording head arranged adjacent to said
8 first surface is substantially equal to said first head-
9 to-media spacing;
10 means for selecting a performance value for a second
11 side of said magnetic tape;
12 means for determining a second head-to-media spacing
13 for said second side of said magnetic tape, said second
14 head-to-media spacing associated with said performance
15 value; and
16 means for forming a second magnetic coating on said
17 second side of said magnetic tape, wherein a distance
18 between a second surface of said second magnetic coating
19 and a second recording head arranged adjacent to said

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20 second surface is substantially equal to said second
21 head-to-media spacing.

1 9. The two-sided magnetic tape of Claim 8, further
2 comprising:
3 means for selecting a Signal-to-Noise Ratio (SNR)
4 value for said second side of said magnetic tape; and
5 means for determining a recording density value for
6 said second side of said magnetic tape, said recording
7 density value for said second side of said magnetic tape
8 associated with said SNR value selected for said second
9 side of said magnetic tape and said second head-to-media
10 spacing.

1 10. The two-sided magnetic tape of Claim 8, wherein said
2 first head-to-media spacing is associated with a
3 roughness of said first surface, said second head-to-
4 media spacing is associated with a roughness of said
5 second surface, said roughness of said second surface is
6 greater than said roughness of said first surface, and a
7 recording density value associated with said first
8 surface is larger than a recording density value
9 associated with said second surface.

1 11. The two-sided magnetic tape of Claim 10, wherein
2 said recording density value associated with said first
3 surface comprises a high recording density value, and
4 said recording density value associated with said second
5 surface comprises a medium recording density value.

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- 1 12. The two-sided magnetic tape of Claim 8, further
2 comprising:
3 means for selecting an SNR value for said second
4 side of said magnetic tape; and
5 means for determining a recording density value for
6 said second side of said magnetic tape, said recording
7 density value for said second side of said magnetic tape
8 associated with said SNR value selected for said second
9 side of said magnetic tape and said second head-to-media
10 spacing, and wherein said SNR value is derived from an
11 equation: $SNR(dB) = n W \lambda^2 e^{-kd}/6$.
- 1 13. The two-sided magnetic tape of Claim 8, wherein said
2 performance value comprises a spooling performance value.